

10/3/17

"Success is not final, failure is not fatal: it is courage to continue that counts"-Winston Churchill

HW:

"2017 A2 CC Multiplying Radicals" worksheet #3, 5, 7, 9, 13, 15, 17, 19, 23, 25
Test on Monday 10/16

AIM: How do we Multiply Radicals?

Warm Up:

$$\begin{array}{l} 1. \quad 3\sqrt{8} + \sqrt{18} \\ \quad \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ \quad \sqrt{4} \quad \sqrt{2} \quad \sqrt{9} \quad \sqrt{2} \\ \quad 3 \cdot 2\sqrt{2} \quad 3\sqrt{2} \\ \quad 6\sqrt{2} + 3\sqrt{2} \\ \quad \boxed{9\sqrt{2}} \end{array}$$

$$\begin{array}{l} 2. \quad a\sqrt{5a} + 3\sqrt{45a^3} \\ \quad \downarrow \quad \quad \quad \swarrow \quad \searrow \\ \quad \quad \quad 3\sqrt{9a^2} \quad \sqrt{5a} \\ \quad \quad \quad \downarrow \quad \quad \downarrow \\ \quad \quad \quad 3 \cdot 3a \quad \downarrow \\ \quad a\sqrt{5a} + 9a\sqrt{5a} \\ \quad \quad \quad \boxed{10a\sqrt{5a}} \end{array}$$

$$3x + 4y$$

$$3x + 4x = 7x$$

When we Multiply radicals:

1. Outside X Outside

2. Inside X Inside

3. Simplify (Break Out, if we can)

Express each of the following products in simplest form:

$$1. \sqrt{5}(\sqrt{10}) = \sqrt{50}$$

$$\swarrow \searrow$$

$$\sqrt{25} \sqrt{2}$$

$$\boxed{5\sqrt{2}}$$

$$2. (3 + \sqrt{6a})(1 + \sqrt{2a})$$

$$3 + 3\sqrt{2a} + \sqrt{6a} + \sqrt{12a^2}$$

$$\swarrow \searrow$$

$$\sqrt{4a^2} \sqrt{3}$$

$$\boxed{3 + 3\sqrt{2a} + \sqrt{6a} + 2a\sqrt{3}}$$

$$3. \sqrt{2} \cdot \sqrt{8} = \sqrt{16}$$

$$\downarrow$$

$$\textcircled{4}$$

$$4. \sqrt{5} \cdot \sqrt{45} = \sqrt{225}$$

$$\downarrow$$

$$\textcircled{15}$$

$$10. \sqrt{21} \cdot \sqrt{\frac{4}{3}} = \sqrt{28}$$

$$\swarrow \searrow$$

$$\sqrt{4} \sqrt{7}$$

$$\textcircled{2\sqrt{7}}$$

$$12. (\sqrt{12})^2 = \sqrt{12} \cdot \sqrt{12} = \sqrt{144} = \boxed{12}$$

$$a) -\sqrt{10} \cdot \sqrt{18}$$

$$\textcircled{-1} \sqrt{180}$$

$$\swarrow \searrow$$

$$\sqrt{36} \sqrt{5}$$

$$-1 \cdot 6 \sqrt{5}$$

$$\textcircled{-6\sqrt{5}}$$

